

Unit 5

Day 6

Factoring Using Imaginary Numbers

Complex

FACTOR OVER COMPLEX:

1)

$$\textcircled{x^2} + 16 = x^2 - -16$$

$$= (x - \sqrt{-16})(x + \sqrt{-16})$$

$$= (x - 4i)(x + 4i)$$

FACTOR OVER COMPLEX:

$$2) \quad 9m^2 + 32 = 9m^2 - -32$$

$$= (3m - \sqrt{-32})(3m + \sqrt{-32})$$

$$= (3m - i\sqrt{32})(3m + i\sqrt{32})$$

$$= (3m - 4i\sqrt{2})(3m + 4i\sqrt{2})$$

FACTOR OVER COMPLEX:

3)

$$18a^2 + 25b^2 = (a\sqrt{18} - 5bi)(a\sqrt{18} + 5bi) \\ (3a\sqrt{2} - 5bi)(3a\sqrt{2} + 5bi)$$

FACTOR COMPLETELY USING REAL & IMAGINARY
NUMBERS:

4)

$$9y^4 - 1 = (3y^2 - 1)(3y^2 + 1)$$

$$(y\sqrt{3} + 1)(y\sqrt{3} - 1)(y\sqrt{3} + i)(y\sqrt{3} - i)$$

FACTORING FOR CALCULUS:

5)

$$5(3y+8)^2 + 10(y-4)(3y+8) =$$

$$\text{let } a = (3y+8)$$

$$b = y-4$$

$$5a^2 + 10ab$$

$$5a(a + 2b)$$

$$5(3y+8)[(3y+8) + 2(y-4)]$$

$$5(3y+8)(3y+8 + 2y-8)$$

$$5(3y+8)(5y) = 25y(3y+8)$$

FACTORING FOR CALCULUS:

$$6) \quad \frac{(x^2 + 1)4 - (4x - 2)(2x)}{(x^2 + 1)^2} =$$

HOMEWORK:

Worksheet #4: 1-6 (bottom)

Worksheet Day 5&6: 70-79 (all)

HW Wksht 4 1-6 bottom, Wksht 70-79 all